"This system provides a fundamentally different way for visitors to see and enjoy the park and allows us to meet our objectives of *protecting the park's resources while providing a quality visitor experience*. It also marks the culmination of an ongoing partnership between the park, the Town of Springdale, including the private business community, and our Congressional delegation."

Former Zion National Park Superintendent Don Falvey at the May 2000 opening of the Zion shuttle bus system

National Park Service Accomplishments in Alternative Transportation

Alternative Transportation Program
U.S. Department of the Interior

Message from the Director

Fran P. Mainella is the current director of the National Park Service.

"The mission of the National Park Service is to preserve and protect the precious lands in our care and to provide for the enjoyment of those lands in a manner that will leave them unimpaired for future generations. My goal is to maintain our existing infrastructure and reduce our backlog of road and bridge needs in an environmentally sensitive manner. We must also develop, when appropriate, sustainable alternative transportation systems as a means of reducing congestion in our park units.

We must work with our partners and gateway communities in developing creative, long-term transportation solutions in and around our parks. Often, transportation challenges are difficult. However, starting planning early and communicating often will help turn these challenges into successes. The visitors to our parks expect a meaningful and enjoyable experience, and it is my challenge to park managers to make sure that our transportation systems are part of that experience."

(Cover photograph: Robb Williams, USDOE)

Our **National Parks**

Protecting Our Natural and Cultural Heritage

From coast to coast, national parks protect our unique natural and cultural heritage. On vacations and day trips, we enjoy the fresh air and wildlife our parks offer. We hike, camp, fish, canoe, and swim. We visit historic monuments and gaze at scenic vistas. Some of us are even inspired to photograph and write poetry about the natural beauty that surrounds us.

The Big Picture

But the beauty, history, and recreation our parks provide are sensitive to human impacts. Nearly 300 million visitors, from the U.S. and around the world, flock to our parks every year. In Grand Canyon National Park in Arizona alone, annual visitation has grown from about 100,000 visitors in 1915 to almost five million visitors in 1998.

More visitors mean more traffic on park roads and in parking areas, resulting in lengthy delays and visitor frustration. For instance, until recently, on a typical peak season day in Zion National Park in Utah, about 5,000 cars competed for 400 parking spots. Traffic congestion also causes air and noise pollution and threatens fragile natural and cultural resources, especially when vehicles are parked in undesignated areas.

A 1.7-mile line of cars waited to enter the South Rim Entrance Station at **Grand Canyon National Park** during the 2002 Memorial Day weekend, causing delays and visitor frustration.

Before the shuttle bus system in **Zion National Park** was implemented in 2000, visitors often parked along the sides of park roads, endangering both pedestrians and wildlife. (Paul Torcellini, USDOE)

On a typical high visitation day in October, visitors to **Great Smoky Mountains National Park** often park in undesignated areas, impacting plants and wildlife.

Today, most park visitors arrive by private vehicle, but the increasing number of motor vehicles in our parks threatens the very resources parks were created to protect.

Learning from the Past, Linking to the **Future**

In the early 1900s, open-topped motor coaches, such as those at **Mt. Rainier National Park** in Washington, gave visitors spectacular views and interpretive services. (Asahel Curtis)

Even in 1951, traffic in **Grand Canyon National Park**—here at the El Toval Hotel—was congested. (Dean Dazey)

In 2001, historic red touring buses were rehabilitated using modern technology and now serve visitors at **Glacier National Park** in Montana.

What is Alternative Transportation?

Alternative Transportation Systems (ATS) integrate all means of travel within a park, including transit, bicycle and pedestrian linkages, and automobiles. Regardless of their size or location, parks follow the objectives of the Alternative Transportation Program (ATP):

- **Improving the visitor experience.** ATS reduce congestion on roads and in parking areas. As a result, more visitors can enjoy a quieter and more relaxed time in a park without worrying about finding a place to park their cars.
- **Protecting natural and cultural resources.** ATS reduce air and noise pollution and parking in undesignated areas—protecting wildlife, monuments, and other park resources.
- **Promoting economic development.** ATS promote local tourism by carrying visitors to nearby hotels, restaurants, shops, campgrounds, and recreation areas. What's more, ATS can lead to new jobs as staff is hired to operate and maintain such systems.
- **Fostering strong partnerships.** To develop ATS, NPS works with other government agencies, local communities and businesses, and environmental, historical, and other groups, strengthening these relationships.
- **Enhancing visitor safety and security.** By reducing vehicle traffic and parking along roads and walkways, ATS improve visitor safety.
- **Enabling new services.** ATS help park staff expand visitor interpretive tours and improve the mobility of visitors with disabilities.

Types of Alternative Transportation

- Bicycle
- Bus
- Boat
- Canal Boat
- Carriage
- Ferry
- Multi-modal trails
- Train
- Tram
- Trolley
- Van

Alternative forms of transportation, from buses to railroads, have always played an important role in the American park experience.

Today, modern versions of these alternative transportation systems are helping to relieve traffic congestion, improve the visitor experience, and protect our precious natural heritage in parks across the country.

For example, NPS worked with the National Park Foundation and the Ford Motor Company to restore 34 of **Glacier National Park**'s legendary red touring buses, adding modern safety features and engines that run on clean-burning propane. **Lowell National Historical Park**'s historic trolley system is so popular that expansion is being studied. And visitors to **Yellowstone National Park** will soon be able to enjoy riding on modernized versions of the park's historic yellow touring buses.

Highlighting Alternative Transportation Program Accomplishments

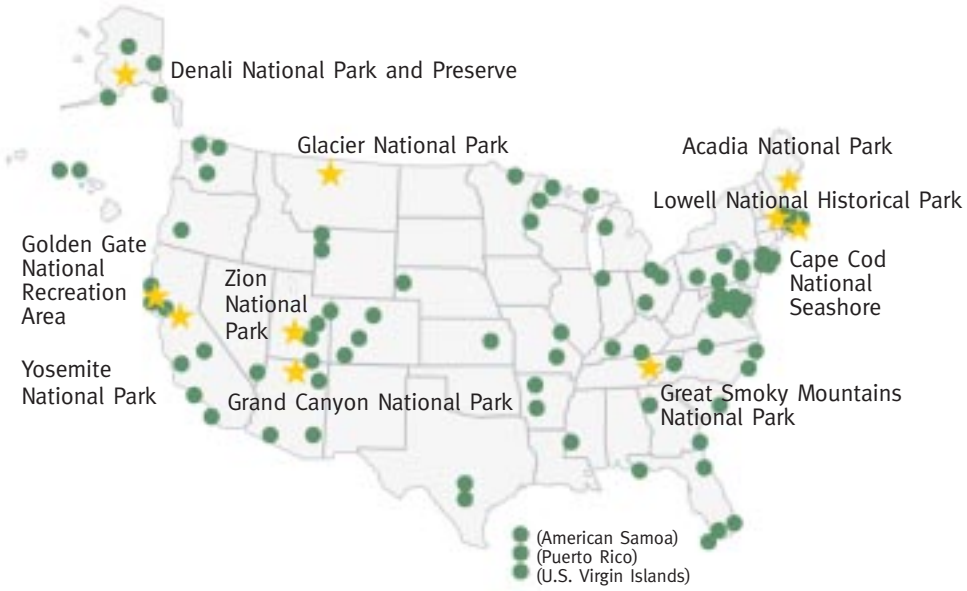
In response to the transportation planning requirements of the Transportation Equity Act for the 21st Century (TEA-21), NPS established an **Alternative Transportation Program** (ATP) in cooperation with the U.S. Department of Transportation Federal Highway Administration and Federal Transit Administration. In addition to coordinating and supporting ATS planning and implementation at parks across the country, the program supports efforts to use transportation to educate visitors about park resources and services and to educate NPS staff so that they can effectively implement ATS. Each fiscal year from 1999 to 2003, the ATP has provided approximately $8 million for ATS efforts.

ATS Needs

In 2001, the U.S. Department of the Interior and the U.S. Department of Transportation released the "Federal Lands Alternative Transportation Systems Study." Mandated by Congress in Section 3039 of TEA-21, the study assessed transit needs at 169 national park units and concluded that meeting needs at 118 sites—by improving or expanding existing services and by implementing new services—will cost at least $78 million a year through 2020, for a total cost of $1.55 billion. This cost includes project development, vehicle and equipment purchases, and operations and maintenance.

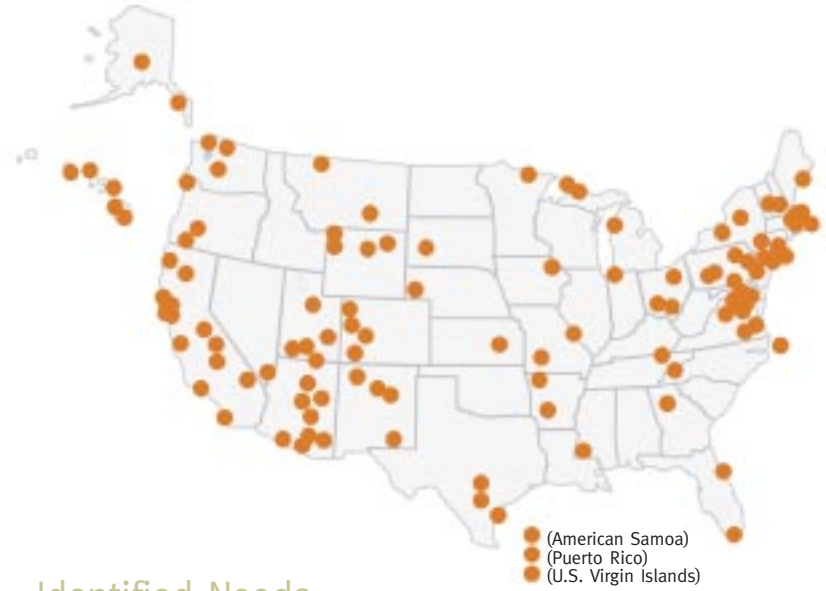
ATP Core Accomplishments

- Allocated nearly $40 million in federal transportation funds to more than 200 planning and implementation projects across the nation.
- Published the Transportation Planning Guidebook for NPS managers about transportation planning, local partnerships, funding, and best practices.
- Formed a multi-federal agency, multi-disciplinary Transportation Assistance Group and assisted more than 40 parks with ATP issues, plans, and projects.
- Conducted the National Vehicle Design Conference with parks and private industry to develop possible design prototypes of future transit vehicles for NPS. Also conducted four regional transportation training conferences entitled "New Approaches to Transportation: Planning, Programs, and Partnerships."
- Published the NPS Guide to Seeking Transportation Enhancement Program Funds.
- Worked with the National Park Foundation and the Ford Motor Company Proud Partners Program to coordinate transportation scholars and interpreters in parks and to rehabilitate some of the historic red touring buses in Glacier National Park.
- Released the ATP "FY 2002-2006 Program Strategy Plan" outlining actions to be achieved and opportunities to partner based on external and internal stakeholder involvement.



Existing Alternative Transportation Systems

Currently, over 100 ATS are moving visitors to and through more than 90 national park units across the country (●), including the sites highlighted in this report (★).



Identified Needs

118 of the 169 NPS sites evaluated in 2001's "Federal Lands Alternative Transportation Systems Study" were found to have current and future transit needs (●).

The Alternative Transportation Program is achieving its goals—

1. improving the visitor experience,
2. protecting natural and cultural resources,
3. promoting economic development,
4. fostering strong partnerships,
5. enhancing visitor safety and security, and
6. enabling new services

—at many parks across the country.

The ATP Is Achieving its Goals

1. Improving the Visitor Experience

Grand Canyon National Park uses buses powered by batteries, compressed natural gas, and liquefied natural gas to shuttle its visitors to park attractions.

"The bus service eliminates the frustration of trying to find parking and therefore means a better vacation experience." —Park Visitor

With ATS, parks can accommodate more visitors, including those without cars, and can allow visitors to access recreational opportunities in sensitive or remote areas. For example, visitors can ride shuttles to high-demand park trailheads, and in some cases they can even bring their bicycles. Visitors can also learn about park resources during on-board interpretive programs led by park rangers or guides.

On busy summer days, up to 6,000 cars compete for 2,500 parking spaces along the South Rim of **Grand Canyon National Park**. To help relieve congestion, Grand Canyon developed a shuttle bus system in 1974

that takes visitors to various South Rim stops. In 2001, this free shuttle service had approximately 4.5 million boardings. Grand Canyon is currently working with government agencies, communities, and organizations outside the park to study the possibility of developing a light-rail system in the park and a regional transportation system that includes the park to further enhance the visitor experience.

Visitors to **Yosemite National Park** have enjoyed regional transit service to the park since 2000. Overseen by three counties that surround Yosemite, the Yosemite Area Regional Transportation System (YARTS) has two bus routes that make stops both inside and outside of the park. Visitors can also ride an in-park shuttle bus system, which Yosemite is currently upgrading and looking into expanding to further relieve park road congestion.

Since 2000, a shuttle bus system has served the most visited area of **Zion National Park**, Zion Canyon, and the local community of Springdale, Utah. The buses, powered by propane, have reduced congestion, noise, and motor vehicle emissions. In its first year, the shuttle service eliminated 42,000 vehicle trips and allowed visitors to spend their time enjoying the park instead of searching for a parking space. Visitors now can hear a rushing river that runs near the main road and can even occasionally spot cougars.

Over the next four years, **Yosemite National Park** is looking to expand its advanced-technology bus fleet.

During peak season in **Zion National Park**, buses shuttle visitors among Springdale and Zion Canyon attractions. (Thomas Wood, USDOE)

"The service makes me enjoy my vacation even more. I really appreciate not having to drive after driving all day to get here." —Park Visitor

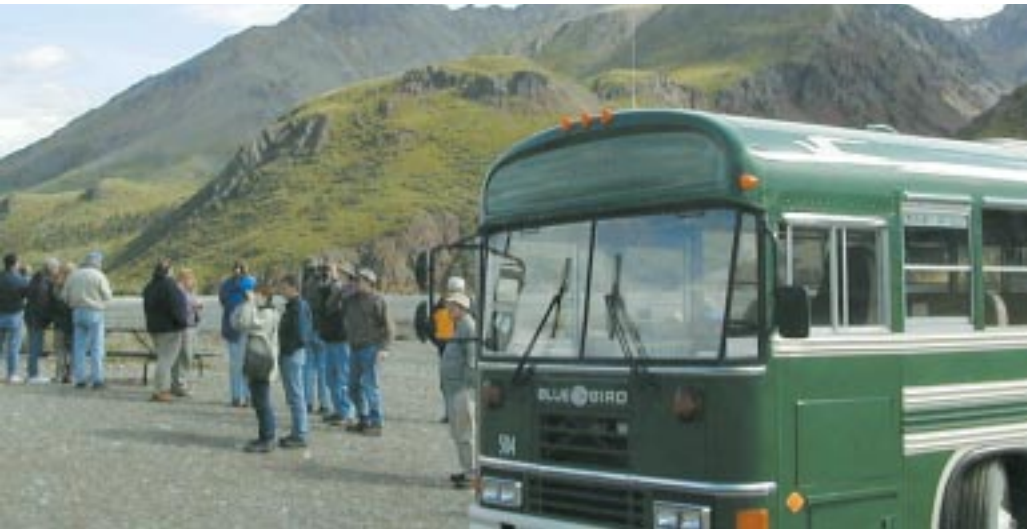
2. Protecting Natural and Cultural Resources

As more automobiles clog park roads and parking areas, parks' natural and cultural resources face many environmental threats.

- **Air Pollution and Haze.** Pollutants endanger the health of park visitors, wildlife, plants, waters, and soils. Carbon monoxide, volatile organic carbons, nitrogen oxides, sulfur dioxide, and particulate matter also cause acid rain and haze, which impairs the visibility of scenic vistas.
- **Impacts to Roadsides.** When parking areas are full, many visitors park their cars on road shoulders or in other undesignated areas, damaging plants, animal habitats, and historic monuments. At Gettysburg National Military Park in Pennsylvania, undesignated parking has damaged signs and historic monuments and endangered Civil War artifacts possibly buried in road shoulders.
- **Noise Pollution.** Motor vehicle noise can drown out natural quiet and the sounds of waterfalls, native birds, and other park wildlife. Since most animals use their sense of hearing to avoid predators, find food, and communicate, noise may also lead to wildlife injuries and cause species to abandon their habitat, eat less, and have fewer offspring.

By relieving traffic congestion, ATS help protect sensitive park resources. What's more, many ATS use vehicles that run on alternative fuels like electricity, natural gas, or propane. Compared to gasoline or diesel vehicles, alternative fuel vehicles produce fewer pollutants and less noise.

For example, **Acadia National Park**'s propane-fueled Island Explorer shuttle buses take visitors and residents to park destinations, campgrounds, hotels, harbors, the airport, and community centers. In 2001, more than 200,000 visitors rode the buses, keeping as many as 88,000 motor vehicles off park roads during the peak summer months. As a result, congestion and noise levels along park roads have decreased, carbon monoxide emissions have dropped by 33 percent, and volatile organic carbon emissions have dropped by 25 percent. Ridership on Island Explorer buses has nearly doubled since the shuttle bus system started running in 1999.



Denali National Park and Preserve's shuttle bus system has helped to protect park resources.

When a new highway between Anchorage and Fairbanks opened in 1972, **Denali National Park and Preserve** realized that more motor vehicles would be coming to the park. To help prevent congestion, air quality problems, noise pollution, and impacts to the park's sensitive wildlife, Denali developed a shuttle bus system that takes visitors throughout the park. As a result, visitors are able to view wildlife in a relatively undisturbed setting.

Since 1987, visitors have parked their cars in a designated area and ridden trams to Coast Guard Beach at **Cape Cod National Seashore**. The trams have relieved traffic congestion and lessened impacts to local dunes, beaches, and wildlife habitat. In partnership with the Cape Cod Regional Transit Authority and the towns of Provincetown and Truro, Cape Cod National Seashore also helps to provide a propane-fueled shuttle bus system during the summer months between Provincetown and Truro. Tourists and residents ride the buses to reach town attractions and the Seashore's beaches in Provincetown. Since this bus system was implemented, other communities on Cape Cod have shown an interest in expanding the service.

Ridership on the **Acadia National Park** Island Explorer bus system continues to grow. (Friends of Acadia)

Buses at **Cape Cod National Seashore** provide seasonal service.

3. Promoting Economic Development

Many communities near parks benefit from the jobs and economic opportunities generated by park tourism. By taking visitors to local restaurants, hotels, campgrounds, and shops, ATS can promote tourism. ATS can also generate jobs as staff is hired to operate and maintain new systems.

The Presidio Park in San Francisco, part of the **Golden Gate National Recreation Area**, is one of the largest urban parks in the world. Buses powered by compressed natural gas transport visitors, residents, and commercial tenants to Presidio Park sites, commercial and residential buildings, and regional public transit connections. Averaging over 5,000 riders a month, the PresidiGo shuttles have helped the park attract new commercial tenants. Also, in September 2002, Presidio Park began participating in San Francisco's CarShare Program, which allows Presidio residents to rent one of four Ford Th!nk City electric cars.

Zion National Park and the gateway community of Springdale worked together to develop a shuttle bus system that takes visitors to stops inside the park and in town. Zion is also training local businesses to serve as "park ambassadors." Businesses that volunteer to participate learn about the park and its shuttle system so that they can pass information on to visitors. In return, these businesses can put an "ambassador" sign in their windows to help attract tourists.

"Excellent idea for tourists. Merchants benefit from the service." —Park Visitor

Electric cars in **Presidio Park** will help to alleviate congestion and prevent air pollution. (GGNRA Park Association)

Visitors to **Zion National Park** can enjoy the park and visit local shops, restaurants, and other town attractions without worrying about parking. (Paul Torcellini, USDOE)

4. Fostering Strong Partnerships

"I am very impressed with this system. I feel very relaxed and safe with our children." —Park Visitor

The Island Explorer shuttle system not only relieves pressure on **Acadia National Park**'s overcrowded roads and parking areas, but also helps to promote business in local communities.

The City of Gatlinburg's trolley also serves **Great Smoky Mountains National Park**.

Communities close to park boundaries often experience the same congestion, noise, and degraded air quality as the parks they are near. Parks work with these communities, local businesses, state and local governments, and environmental, recreational, and other groups to design ATS that meet the needs of visitors, park resources, and surrounding communities.

Strong cooperation between local communities, business interests, the state of Maine, and **Acadia National Park** led to the successful development of the Island Explorer shuttle bus system in the summer of 1999. Local businesses and municipalities also contribute funding so that visitors and residents can ride for free. This way, even when parking areas are full, Island Explorer shuttle buses help to promote local business districts.

Every year, approximately two million people visit **Great Smoky Mountains National Park**, filling park and local roads and overwhelming community centers. Since 1997, the City of Gatlinburg has run its Gatlinburg Trolley on a limited route in the park, serving the visitor center, a popular campground, and a popular hiking trailhead. Today, Great Smoky Mountains is working with Gatlinburg, other nearby communities, local, state, and federal government agencies, environmental groups, and local business and tourism interests to develop a variety of transportation and land-use strategies that will help manage regional traffic.

5. Enhancing Visitor Safety and Security

Since many parks do not have enough parking at interpretive and scenic areas to meet demand, visitors often create their own parking spaces along roadsides or in other undesignated areas. As a result, park staff, visitors, and wildlife are put in danger. ATS allow visitors and park staff to travel safely within a park.

Roadside parking at **Grand Canyon National Park** often exposed visitors to unsafe conditions as they walked along busy roads to their destinations. Grand Canyon currently runs 22 buses that shuttle visitors to park attractions, improving visitor safety by reducing parking in undesignated areas.

Hazardous parking has been reduced at **Grand Canyon National Park**.

The ATP Is Achieving its Goals

6. Enabling New Services

Park rangers can accompany visitors on buses, boats, and other alternative transportation to educate them about park features and environmental sensitivities.

At **Lowell National Historical Park**, canal boats and historic trolleys transport visitors to historic buildings, museums, the park visitor center, and the center of the city of Lowell. Park rangers provide a narrated tour to canal boat riders. Signs along walkways that lead from the park's canal boats to the park's historic trolleys provide even more information about the history of the American Industrial Revolution.

Historic red touring buses were modernized and reintroduced to **Glacier National Park** during the 2001 and 2002 summer seasons. Refurbished by the Ford Motor Company and the National Park Foundation, the unique canvas-topped buses give visitors a sense of the park's history and a one-of-a-kind panoramic view of the park's natural beauty.

Lowell National Historical Park's historic trolley system is so popular that expansion is being studied.

Alternative Transportation

The Future of Park Transportation

Alternative transportation systems in our national parks benefit visitors, the environment, surrounding communities and businesses, and park staff. Continuing to be an important part of our American park experience, these systems are helping to protect the unique natural and cultural resources of our parks—ensuring that they can be enjoyed for generations to come.

"The Alternative Transportation Program is going to be increasingly important to ensuring the NPS meets its mandate to preserve resources while providing for visitor enjoyment."

—Laura Loomis, National Parks Conservation Association

Alternative transportation systems are helping to preserve our national parks for current and future park visitors—including these school children from Springdale, Utah. The children sang at the grand opening of the **Zion National Park** shuttle bus system in 2000. (Robb Williamson, USDOE)

For their assistance in preparing this document, the following individuals are gratefully acknowledged: Audrey Ambrosino of Lowell National Historical Park; Steve Attardo of Yosemite National Park; David Barna of the NPS Office of Communications; Teresa Cantrell of Great Smoky Mountains National Park; Norma Craig of Yosemite National Park; Tom Crikelair of Crikelair Associates; Tom DuRant of the NPS Harper's Ferry References Services Office; Marla Major of the Friends of Acadia; Phyllis Motsko of Denali National Park and Preserve; Mark Newcastle of the US Fish and Wildlife Service; Steve Pittleman, NPS Webmaster; Michael Quinn of Grand Canyon National Park; Kirk Scott of Zion National Park; Patrick Shea of the NPS Denver Service Center; Jim Tuck of Grand Canyon National Park; and Mike Wichmann of Yosemite National Park.

All visitor quotes are from the 2001 summer season onboard passenger survey for the Island Explorer shuttle bus system at Acadia National Park in Maine.

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Visit the NPS Alternative Transportation Program web site for more information about the national park transportation program: http://www.nps.gov/transportation/alt/.

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